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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2000		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207133F F-16 Squadrons				PROJECT 672671		
COST (\$ in Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
672671	F-16 Squadrons	120,389	114,162	124,903	84,465	76,082	65,704	97,215	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**
 The F-16 fighter aircraft program satisfies the need for modernization of the USAF and allied multimission tactical fighter forces. The F-16 is a single-engine, single-seat, multirole tactical fighter with full air-to-air and air-to-surface combat capabilities. The F-16 complements the F-15 in counter-air missions and is the primary aircraft in the surface attack role. The F-16C/D program develops, integrates, and qualifies systems to enhance the overall performance of the F-16 mission.

The F-16 program develops enhanced combat capability in both the air-to-ground and air-to-air role. Several modifications to improve the F-16's combat capabilities have been combined into a single modification known as the Common Configuration Integration Program (CCIP) to save significant costs during the production phase. CCIP will modify all Block 40 and Block 50 F-16 aircraft; Block 50 is the lead platform. CCIP integrates several programs under one umbrella and allows incorporation of AIM-9X onto the F-16:

- The main driver for CCIP will be the Link 16 program. Link 16 is a data link that connects main components of a battle arena to maintain awareness and to share battle management data. The Link 16 program designs the appropriate Group A (hardware mounted permanently on aircraft) to incorporate existing Group B (hardware that is easily removed from airplane) developed by the Multifunctional Information Distribution System (MIDS) Office and adapted for use on the F-16.
- To enhance the display of the Link 16 data, the current black and white display will be changed out with the Color Multifunction Display (CMFD) used by the European Participating Air Force's (EPAF) F-16s.
- To have sufficient computing power in the Block 40/50 aircraft to operate Link16 and to allow the cost savings by using a common Operational Flight Program, the General Avionics Computer (GAC) must be replaced with the Modular Mission Computer (MMC). The MMC is an upgraded version of the computer that was developed for the EPAF Mid-life Update program. The Block 50 F-16 is developing the MMC for USAF requirements. The MMC will extend the cost effective life of the F-16 through replacement of three Line Replaceable Units and the addition of significant memory and processing growth provisions.
- The Joint Helmet Mounted Cueing System (JHMCS) incorporates a man-mounted, ejection capable helmet mounted display system, with the capability to cue and verify cueing of high off-axis sensors and weapons. The F-16 JHMCS program will integrate the following government furnished equipment with the F-16: flight helmet with display optics, image source, helmet tracker transducer w/attached cable, graphics processor/video hardware and software to drive the display, helmet tracker hardware and software. The integration will interface with aircraft computers, weapons and sensor hardware and will provide software to integrate the JHMCS functions with other onboard systems.

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<p>(U) <u>A. Mission Description Continued</u> Other modifications which are being or will be developed during the FYDP:</p> <p>a. Advanced Weapons Integration will integrate Joint Direct Attack Munition (JDAM), Joint Stand-off Weapon (JSOW) and Wind Corrected Munition Dispenser (WCMD) smart weapons into the Block 40 and Block 50 F-16.</p> <p>b. Global Positioning System (GPS) Integration adds GPS capability to the Block 30 and supports testing of GPS changes to other F-16 Blocks. The F-16C/D development efforts are complemented by comprehensive Operational Flight Program (OFP) upgrades and flight tests.</p> <p>c. Integrate a targeting pod on the Block 50/52 and transition the HARM Targeting System (HTS) pod to the left inlet hardpoint. This will allow the F-16 Block 50 to perform the SEAD/DEAD mission.</p> <p>d. The Mark XII IFF system (Air-to-Air Interrogator) consists of a single unit interrogator/transponder, a beam forming network, fuselage-mounted array antenna elements, and a lower interrogator antenna. The system provides a higher reliability rate and increases performance over present systems. Initial capabilities include coverage of + or - 60 degrees azimuth and elevation coverage with a + or - 2 degree accuracy, a range accuracy of 152 meters and range of 100 nmi. 32 in beam targets can be handled. Modes 1, 2, 3/A, C, S, and 4 are available.</p> <p>e. Structural analysis from the on-going Structural Integrity Program (SIP) has indicated that the F-16 is experiencing structural fatigue that may impact the ability of the airframes to reach their 8,000 hrs service life. RDT&E funds are required to design the required structural modifications, as appropriate for each F-16 Block of aircraft. This program, Falcon Star, (RDT&E only) will be cost shared with the Multi-National Fighter Program (MNFP) countries.</p> <p>f. The Auto Ground Collision Avoidance System (AGCAS) program is presently a Air Force Research Laboratory (AFRL) led flight test program. The funds allocated in FY01 is required to begin the transition of the program to Engineering Manufacturing & Development (EMD). The funds will be used for risk reduction efforts which included continued flight testing of the capability available from the research program and initial design and trade studies for potential hardware and software solutions for an automatic ground collision avoidance system.</p> <p>The F-16, which received Milestone III approval in FY 1977, is an operational aircraft.</p>																
<p>(U) <u>FY 1999 (\$ in Thousands)</u></p> <table> <tr> <td>(U) \$20,085</td> <td>Continued Link 16 Block 40/50</td> </tr> <tr> <td>(U) \$6,255</td> <td>Continued Joint Helmet Mounted Cueing System (JHMCS) Block 40/50 (formerly AIM-9X development)</td> </tr> <tr> <td>(U) \$3,655</td> <td>Continued Block 40 Color Display Development/Integration</td> </tr> <tr> <td>(U) \$10,300</td> <td>Continued Modular-Mission Computer (MMC) Block 40</td> </tr> <tr> <td>(U) \$3,928</td> <td>Continued Training Devices (Unit Only)</td> </tr> <tr> <td>(U) \$43,279</td> <td>Continued OFP Updates</td> </tr> <tr> <td>(U) \$1,215</td> <td>Completed Smart Weapons Integration</td> </tr> </table>			(U) \$20,085	Continued Link 16 Block 40/50	(U) \$6,255	Continued Joint Helmet Mounted Cueing System (JHMCS) Block 40/50 (formerly AIM-9X development)	(U) \$3,655	Continued Block 40 Color Display Development/Integration	(U) \$10,300	Continued Modular-Mission Computer (MMC) Block 40	(U) \$3,928	Continued Training Devices (Unit Only)	(U) \$43,279	Continued OFP Updates	(U) \$1,215	Completed Smart Weapons Integration
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
07 - Operational System Development		February 2000
PE NUMBER AND TITLE		PROJECT
0207133F F-16 Squadrons		672671
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 1999 (\$ in Thousands) Continued</u>		
(U) \$2,431	Continued Block 30 GPS Integration Activities	
(U) \$27,841	Continued Flight Tests DT&E	
(U) \$1,400	Completed ALE-50 - Congressional Kosovo Plus Up	
(U) \$120,389	Total	
(U) <u>FY 2000 (\$ in Thousands)</u>		
(U) \$14,472	Complete Block 50 Link 16, Continue Block 40	
(U) \$9,770	Complete Block 50 JHMCS, Continue Block 40	
(U) \$586	Continue Block 40 Color Display Development/Integration	
(U) \$8,286	Continue Block 40 MMC	
(U) \$2,450	Continue Training Devices (Unit Only)	
(U) \$46,653	Continue OFP Updates	
(U) \$888	Complete Block 30 GPS Integration Activities	
(U) \$31,057	Continue Flight Tests DT&E	
(U) \$114,162	Total	
(U) <u>FY 2001 (\$ in Thousands)</u>		
(U) \$5,000	Continue Block 40 Link 16	
(U) \$4,300	Continue Block 40 JHMCS	
(U) \$1,500	Continue Block 40 Color Display Development/Integration	
(U) \$5,000	Continue Block 40 MMC	
(U) \$11,351	Continue Training Devices (Unit and Maintenance)	
(U) \$54,955	Continue OFP Updates	
(U) \$32,447	Continue Flight Tests DT&E	
(U) \$600	Initiate Joint Tactical Combat Training System (JTCTS)	
(U) \$3,250	Initiate Block 50 HTS/TGP Capability (Software development, design, test assets)	
(U) \$1,500	Initiate Falcon Star (Structural analysis and design)	
(U) \$5,000	Initiate Auto GCAS (Risk reduction)	
(U) \$124,903	Total	
Project 672671		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2000		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207133F F-16 Squadrons			PROJECT 672671		
(U) <u>B. Budget Activity Justification</u>									
Since the development activities in this PE support an operational aircraft, these development activities are funded in the Operational System Development budget activity 7.									
(U) <u>C. Program Change Summary (\$ in Thousands)</u>									
				<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>		<u>Total Cost</u>	
(U)	Previous President's Budget (FY 2000 PBR)			139,631	112,520	93,058		TBD	
(U)	Appropriated Value			140,076	115,520				
(U)	Adjustments to Appropriated Value								
	a. Congressional/General Reductions			-49	-10				
	b. Small Business Innovative Research			-4,274					
	c. Omnibus or Other Above Threshold Reprogram			-12,186	-627				
	d. Below Threshold Reprogram			-2,109					
	e. Rescissions			-1,069	-721				
	f. Other							TBD	
(U)	Adjustments to Budget Years Since FY 2000 PBR					31,845			
(U)	Current Budget Submit/FY 2001 PBR			120,389	114,162	124,903		TBD	
Note: \$600 of the BTR amount of \$2,109 used to pay canceled year bill									
(U) <u>Significant Program Changes:</u>									
FY99: 'Omnibus or Other Above Threshold Reprogram' includes transfer of \$14.486M to BP10 for advance procurement for 10 aircraft in FY 00 and receipt of the \$2.3M from the emergency supplemental fund (\$1.4M of 3600 funds for ALE-50 flight test, \$.9M exchanged for 3400 funds for ALE-50 OFP development.)									
FY 00: \$3,000 Congressional plus up for Air to Air Interrogator development for Block 50 Aircraft.									
FY01: \$31,845 increase to 'Adjustments to Budget Years Since FY2000 PBR' is for AAI, Blk 50 HTS/TGP capability, Falcon STAR, and Auto GCAS.									
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>									
		<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	
(U)	Aircraft Procurement (3010F), Line Item 5; F-16 C/D (MYP)*	41,109	262,182	0	0	165,975	198,365	203,049	TBD
(U)	Aircraft Procurement	256,402	283,060	248,830	255,311	246,082	240,827	193,072	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2000
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0207133F F-16 Squadrons	PROJECT 672671
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(U) **D. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(3010F), Line Item 34, F-16 Mods									
(U) Aircraft Procurement (3010F), Line Item 73, Post Production Support	36,634	43,932	25,464	15,500	15,705	13,861	14,340		TBD

* 3010F, Line Item 5 Program Funding for FY00, FY03-05, is for force structure aircraft, 10 A/C in FY 00, 6 A/C in FY 03, FY 04-FY 05 7 A/C in each respective year.

(U) **E. Acquisition Strategy**
 The procurement of 30 additional Blk 50/52 aircraft, 10 FY00/6 FY03/7 FY03/7 FY04, for the active force will enable the AF to replace the Blk 10/15 F-16 A/B aircraft of two Air National Guard (ANG) Air Defense Fighter (ADF) squadrons with newer, more capable Blk 30 F-16 C/D aircraft from the active fleet. RDT&E funds will primarily be executed in developing improved capability, maintenance and safety mods. Operational Flight Program (OFP) software will be continuously updated to complement mod development efforts. The approach to contracting varies by individual project. Lockheed Martin Tactical Aircraft Systems (LMTAS) is the prime contractor on all systems except the simulator/trainer (Hughes Co.), the 110 Engines (General Electric), and the 229 Engines (Pratt & Whitney). Contract types are CPIF, CPFF, FFP.

(U) **F. Schedule Profile**

	<u>FY 1999</u>			<u>FY 2000</u>			<u>FY 2001</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) CONTRACT MILESTONES												
(U) Blk 30 GPS Integration Activities										X		
(U) Advanced Weapons Integration Dev				X								
(U) LANTIRN BDA				*								
(U) Block 50 HTS/TGP Capability											X	
(U) Falcon Star											X	
(U) Auto GCAS												X
(U) JTCTS						X					X	
(U) AAI											X	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2000			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207133F F-16 Squadrons			PROJECT 672671		
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 1999</u>		<u>FY 2000</u>			<u>FY 2001</u>
(U)	Link 16 Block 50				14,633		9,186			0
(U)	Link 16 Block 40				5,452		5,286			5,000
(U)	MMC Block 40				10,300		8,286			5,000
(U)	Color Display Block 40				3,655		586			1,500
(U)	JHMCS Block 50				4,500		4,885			0
(U)	JHMCS Block 40				1,755		4,885			4,300
(U)	Training Devices				3,928		2,450			11,351
(U)	Smart Weapons Integration				1,215		0			0
(U)	Block 30 GPS Integration				2,431		888			0
(U)	OPF Updates (Includes AAI)				42,549		46,653			54,955
(U)	Block 42 IDM Integration				630		0			0
(U)	Flight Tests DT&E				27,841		31,057			32,447
(U)	Joint Tactical Combat Training System				0		0			600
(U)	LANTIRN BDA				100		0			0
(U)	Block 50 HTS/TGP Capability (Software development, design, test assets)				0		0			3,250
(U)	Falcon Star (Structural analysis and design)				0		0			1,500
(U)	Auto GCAS (Risk reduction)				0		0			5,000
(U)	ALE-50				1,400					
(U)	Total				120,389		114,162			124,903
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
										February 2000
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT
07 - Operational System Development					0207133F F-16 Squadrons					672671
(U) <u>Performing Organizations Continued:</u>										
<u>Product Development Organizations</u>										
CCIP	T&M	Feb 97	5,384	5,384	5,384				0	5,384
(LMTAS)										
Link 16 Blk 50 (LMTAS)	SS/CPIF	Apr 98	29,446	29,446	5,627	14,633	9,186		0	29,446
Link 16 Blk 40 (LMTAS)	SS/CPIF	Apr 98	17,538	17,538	1,800	5,452	5,286	5,000	0	17,538
MMC Blk 50 (LMTAS)	SS/CPIF	Jan 92	172,530	172,530	172,530				0	172,530
MMC Blk 40 (LMTAS)	SS/CPIF	Apr 98	26,086	26,086	2,500	10,300	8,286	5,000	0	26,086
Color Display Blk 50	SS/CPIF	Apr 98	650	650	650				0	650
(LMTAS)										
Color Display Blk 40	SS/CPIF	Apr 98	7,541	7,541	1,800	3,655	586	1,500	0	7,541
(LMTAS)										
JHMCS Blk 50 (LMTAS)	SS/CPIF	Apr 98	10,385	10,385	750	4,500	4,885		0	10,135
JHMCS Blk 40 (LMTAS)	SS/CPIF	Apr 98	11,940	11,940	750	1,755	4,885	4,300	0	11,690
JHMCS Int Study (LMTAS)	SS/CPFF	Apr 98	4,458	4,458	4,458				0	4,458
AIM/9X	CPAF	Apr 98	115	115	115				0	115
(LMTAS)										
AAI Blk 50 (LMTAS)	SS/CPIF	Aug 99	6,590	6,590	0	2,990	5,691			8,681
Trainers	FFP	Apr 97	44,979	44,979	14,663	3,928	2,450	11,351	0	32,392
(Hughes)										
Smart Wpns (LMTAS)	CPIF	Dec 95	TBD	TBD	8,700	1,215			0	9,915
GPS Integration (Various)	Various	Jul 97	20,200	20,200	15,231	2,431	888		0	18,550
OFP Updates (LMTAS)	CPIF/T&M	Dec 95	TBD	TBD	114,007	39,292	40,544	54,955	Continuing	TBD
IDM Blk 42 (LMTAS)	FP	Nov 98	670	670	0	630			0	630
JTCTS	TBD	TBD	TBD	TBD				600	1,200	1,800
(TBD)										
F-16 A/B SLEP	TBD	TBD	TBD	TBD		0			0	0
LANTIRN BDA						100				100
Block 50 HTS/TGP								3,250		3,250
Capability										
Falcon Star								1,500		1,500
Project 672671					Page 7 of 8 Pages					Exhibit R-3 (PE 0207133F)

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2000	
BUDGET ACTIVITY			PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development			0207133F F-16 Squadrons				672671	
(U) <u>Performing Organizations Continued:</u>								
<u>Product Development Organizations</u>								
Auto GCAS							5,000	5,000
ALE-50				1,400				1,400
<u>Support and Management Organizations</u>								
ALR-56M Support			447	267	418	0	Continuing	TBD
Radar Eval			280				0	280
Halon Eval			40				0	40
<u>Test and Evaluation Organizations</u>								
600 Gallon Tank				2,296			0	2,296
Flight Tests	Continuing	Continuing	122,991	27,841	31,057	32,447	Continuing	TBD
F-16 Y2K Demo	Continuing	Continuing	850					850
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
			<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>								
Rescission								
Subtotal Product Development			348,965	92,281	82,687	92,456	TBD	TBD
Subtotal Support and Management			767	267	418	0	TBD	TBD
Subtotal Test and Evaluation			126,137	27,841	31,057	32,447	TBD	TBD
Total Project			475,869	120,389	114,162	124,903	TBD	TBD